Maine Forest Service
Forest Entomologists

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Invasive Insect Threats to Maine Forests

Developed April 2009 as a resource for Maine Forest Service Forest Rangers

What are invasive species?

- Are not naturally found in the area
- Cause harm to:
  - environment
  - economy
  - human health

Familiar invasive forest pests

Gypsy Moth

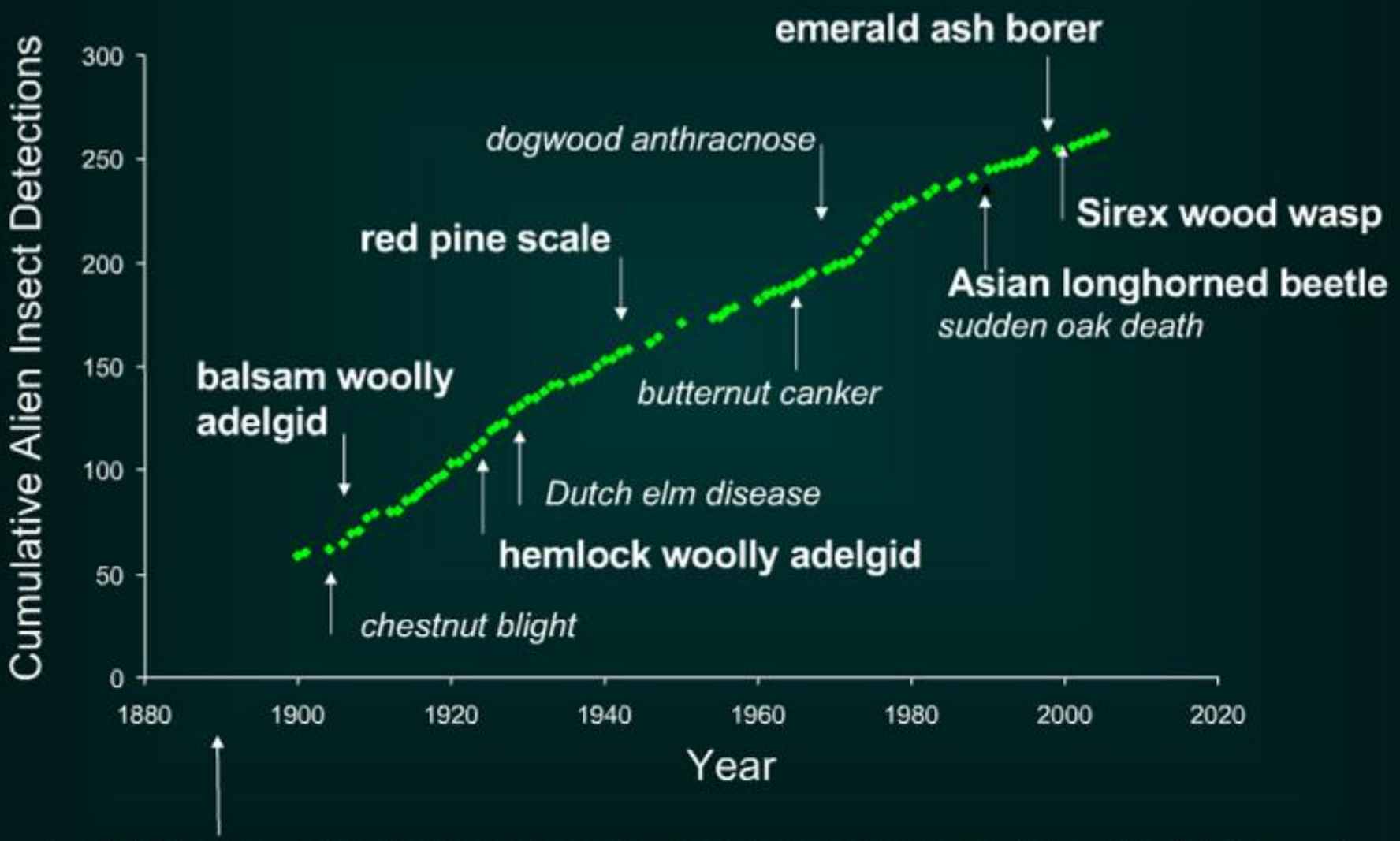
Browntail Moth

Chestnut Blight

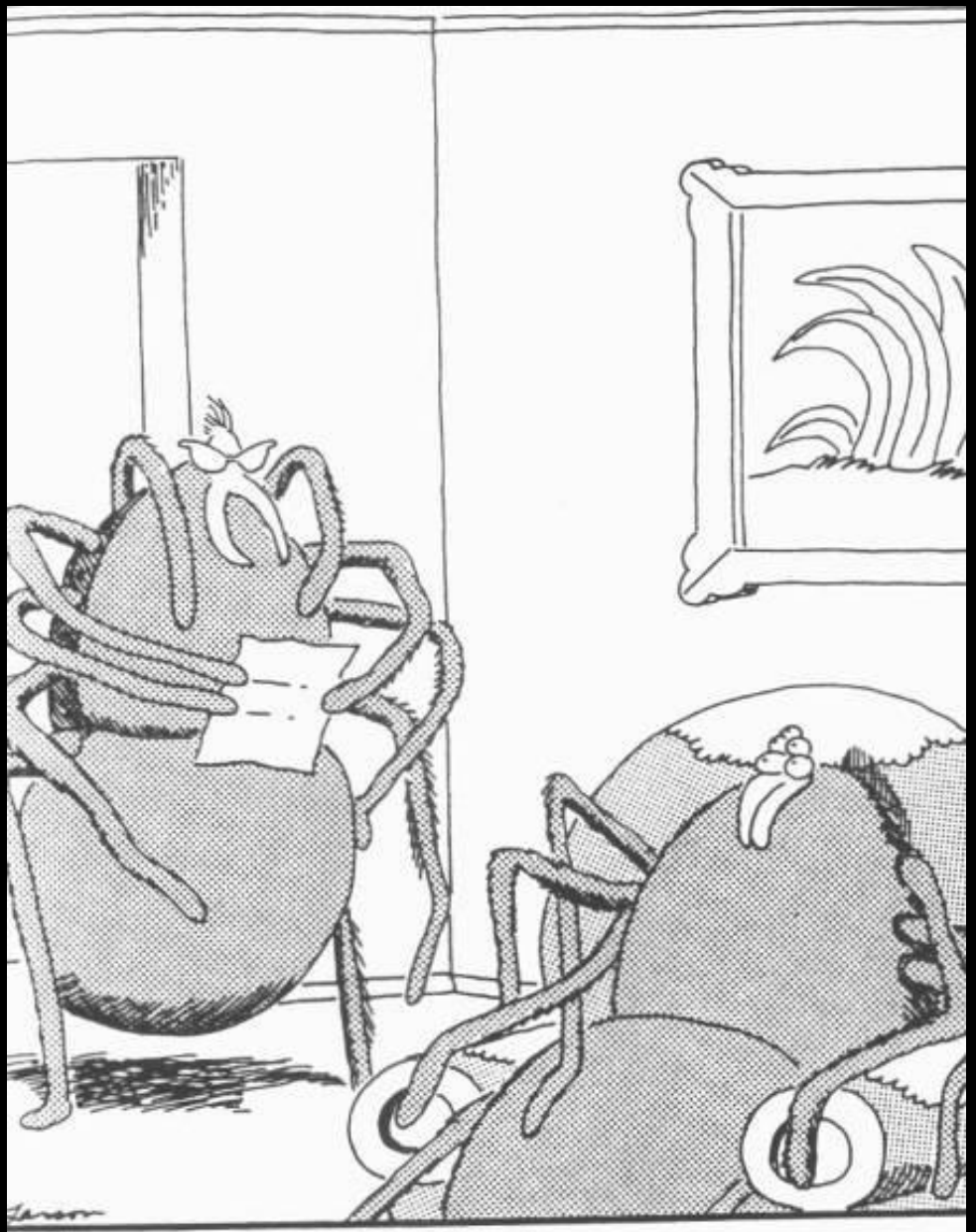
Beech Bark Disease

Healthy Beech + Scale + Fungus = Disease

Some Notable Insect & Disease Introductions



Pre 1900: **gypsy moth**, **beech scale**, **larch casebearer**, *white pine blister rust*



"It's a letter from Julio in America....His banana bunch arrived safely and he's living in the back room of some grocery store."

Many Invasive Pests Can Be Moved in Firewood

- Firewood
  - Recreational
  - Camp owners
  - Commercial dealers

Take Home Message:

Buy firewood locally.

Try not to buy firewood harvested more than 50 miles away.

Firewood--recreational

Please leave your firewood at home

- Buy local firewood
- Travel with kiln-dried wood

Asian Longhorned Beetle (ALB)

Invasion Pathway:

Solid Wood Packing Material

Spread:

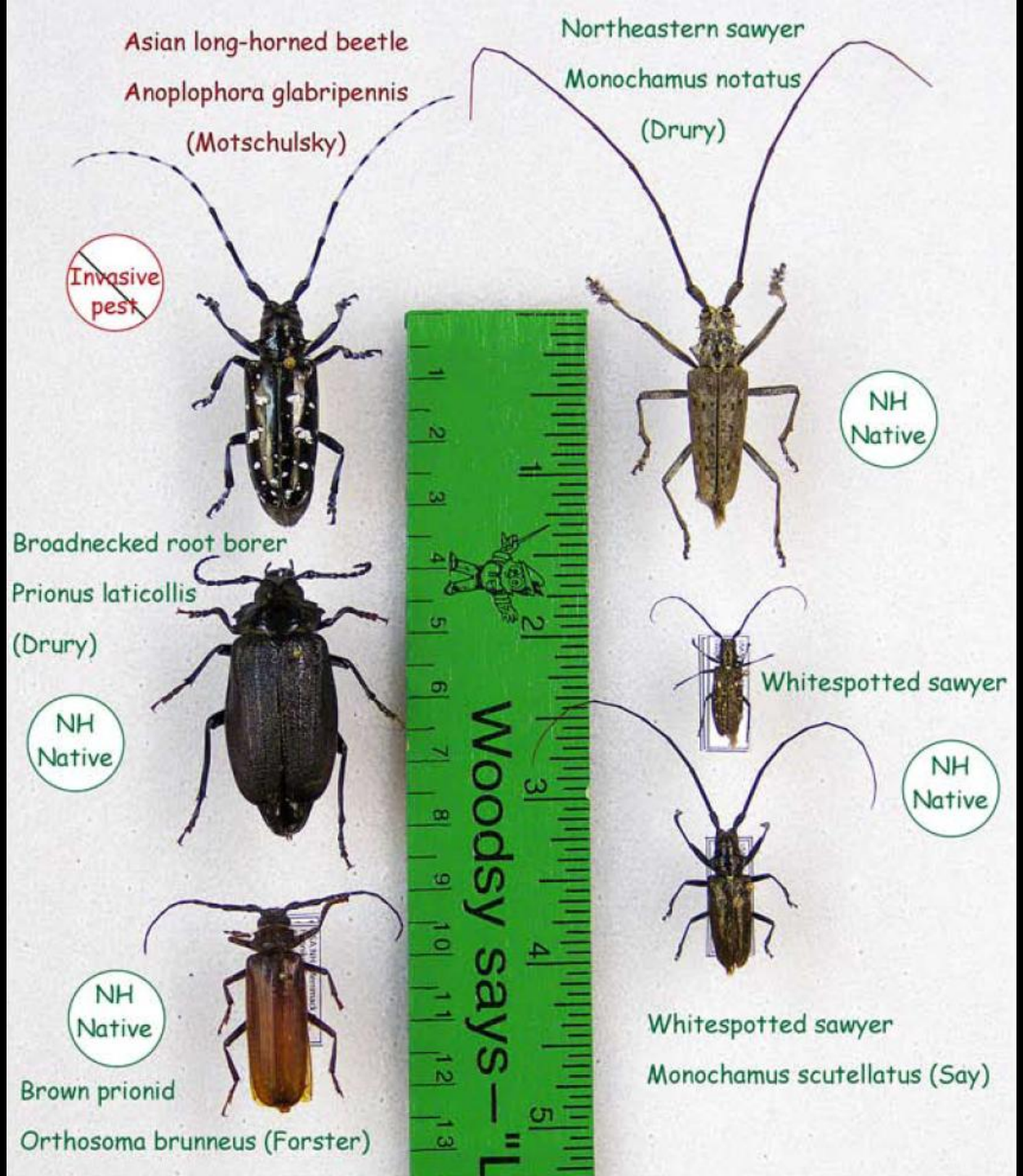
Firewood, Nursery Stock

Recognizing ALB

- **Large**—1.25 to 1.5 inches—larger than a paper clip
- **Shiny**—like a bowling ball, patent leather, or a new car

- **Black**— deep dark black (not sort of black, no traces of brown)
- **White markings**—bold stripes on antennae, distinctive blotches on back (blue feet when alive)

Comparison of ALB with native beetles



Recognizing ALB

A heavily infested tree can look reasonably healthy

But look for…

Recognizing ALB

Large exit holes
(size of pencil or larger)

Egg niches
(chewing marks visible)

Tunnels
within the
wood

Recognizing ALB

Sawdust or wood shavings on limbs

Adult feeding along midribs of leaves

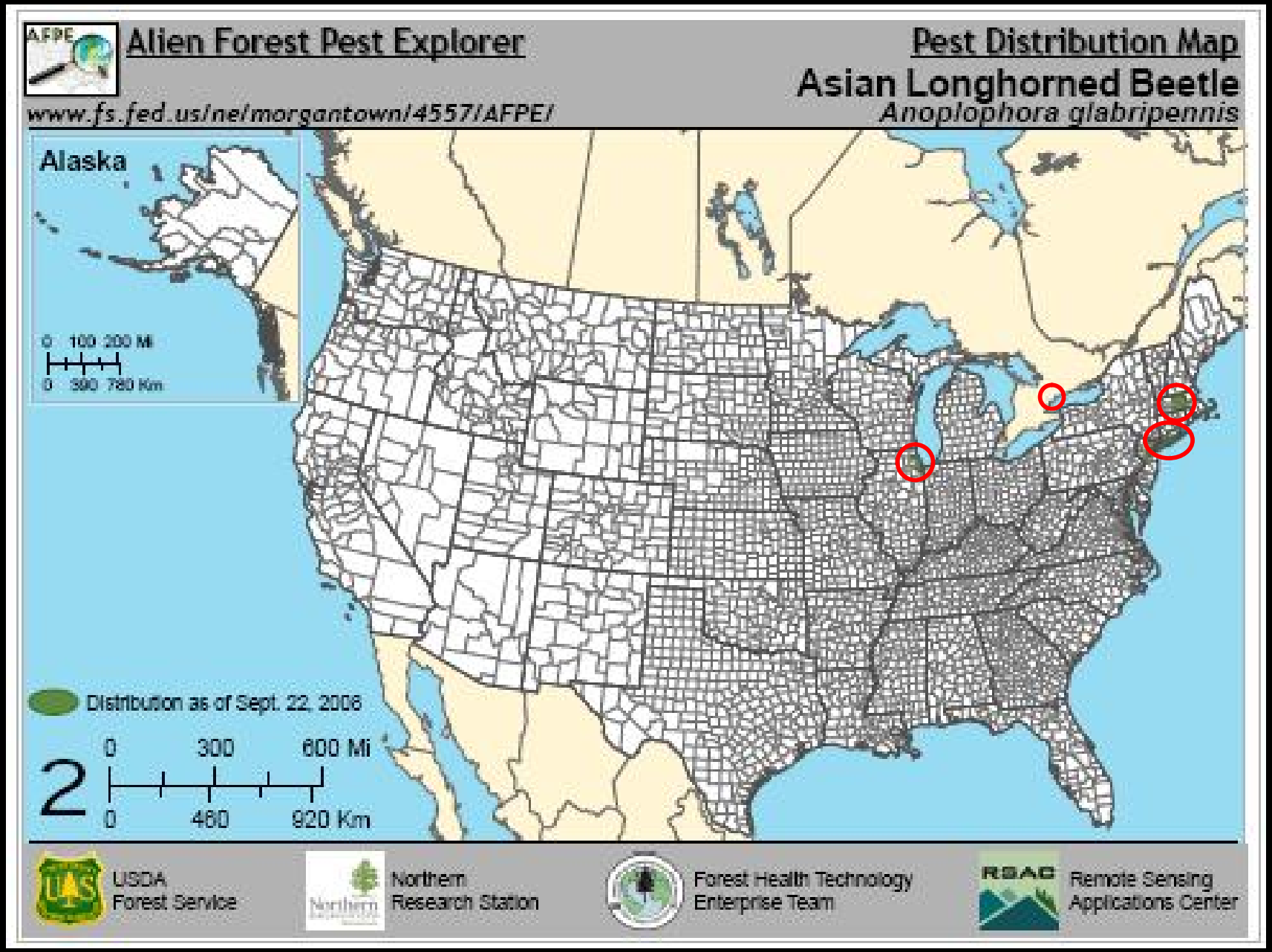
Oozing foaming sap

Hosts: **Maple**, Birch, Willow, Elm

Poplar, Horse-chestnut, Ash, Mountain-ash

Closest Known Infestation <110 Mi.

- Worcester, Mass and surrounding area
- Detected in August 2008 (**was present for 8-15 years before detection!**)
- High potential for **legal and innocent** movement of infested wood to homes, camps, campgrounds in Maine



Also in New York, NY, New Jersey, and Toronto, ON and eradicated from Chicago.

Emerald Ash Borer (EAB)

Invasion Pathway:

Solid Wood Packing Material

Spread:

Firewood, Nursery Stock

Recognizing EAB

Over 75% of new infestations caused by firewood

-Exotic beetle (from Asia)
-Bright metallic green
-½ inch long
-Bores under bark of ash trees

Recognizing EAB

D-shaped exit holes

Serpentine tunneling under bark

Bark splitting

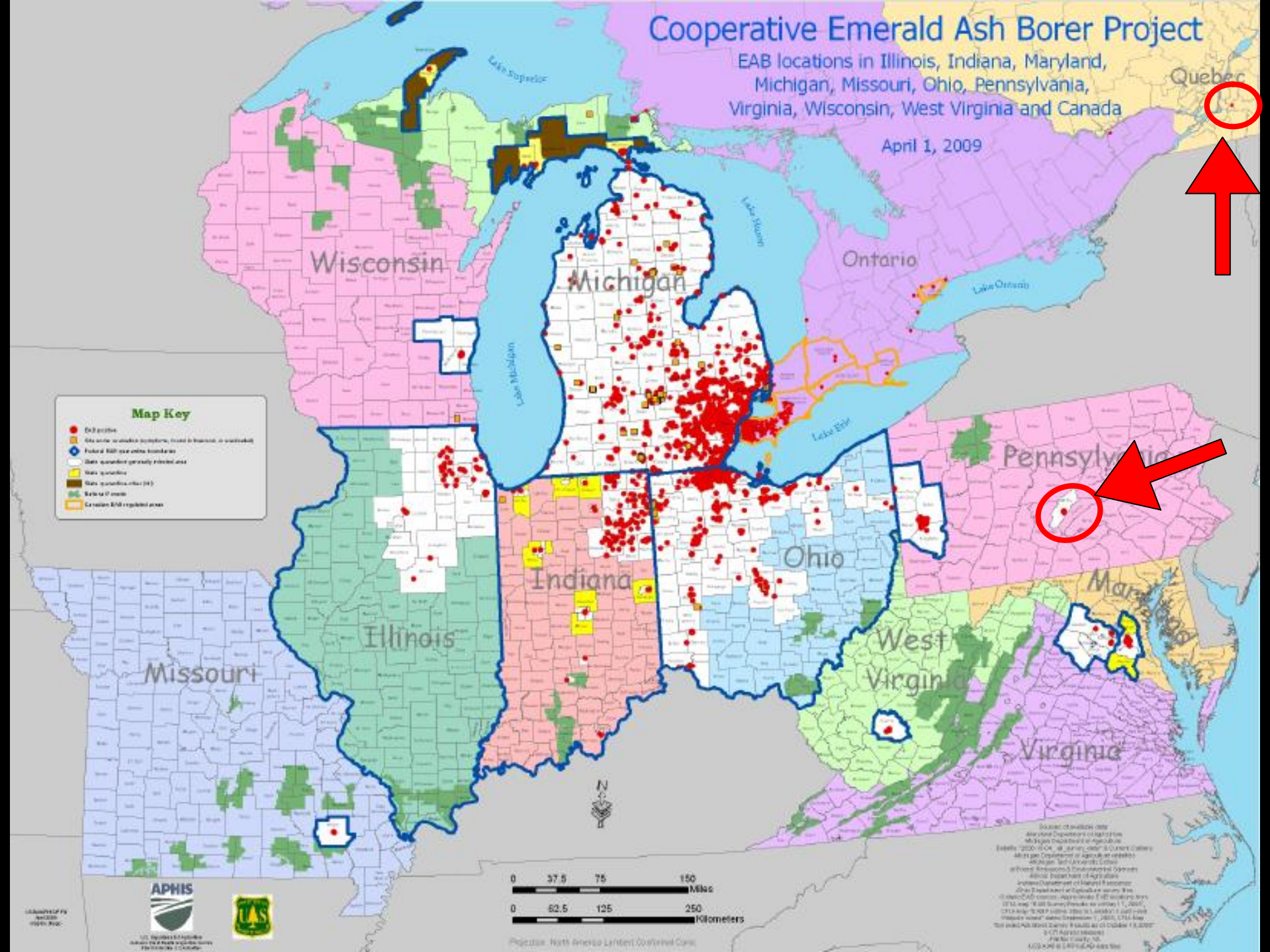
Recognizing EAB

Crown decline
(from top down)

Epicormic growth

Impact

- Hosts
  - Attacks **all** species of North American ash
  - Kills **all** of the trees it attacks
  - Has killed over 40 million trees since 2002
  - Has the potential to wipe out whole genus of ash


Cooperative Emerald Ash Borer Project
EAB locations in Illinois, Indiana, Maryland, Michigan, Missouri, Ohio, Pennsylvania, Virginia, Wisconsin, West Virginia and Canada
April 1, 2009
Quebec
Wisconsin
Michigan
Ontario
Lake Superior
Lake Huron
Lake Michigan
Lake Erie
Lake Ontario
Pennsylvania
Ohio
Indiana
Illinois
Missouri
West Virginia
Virginia
Map Key
N
0 37.5 75 150 Miles
0 62.5 125 250 Kilometers
APHIS

News Release: Feb 25, 2009

"…**Emerald ash borer** has been discovered in **Central Pennsylvania** in Mifflin County. The infestation has most likely **been there for several years**. We will be coordinating our DCNR efforts with the PA Emerald Ash Borer Task Force. The **infestation was reported by a landowner who sent digital photos…**"

Brown Spruce Longhorned Beetle

- In Nova Scotia
- Kills all species of spruce
- Came in to Port of Halifax, NS before 1998
- Starting to see spread after hurricane in 2004 damaged wide area of forest

Brown Spruce Longhorned Beetle

Tetropium fuscum

- Look for resin covered trunks
- Round to D-shaped 1/8” exit holes
- Can also attack fir, larch, pine

Hemlock Woolly Adelgid (HWA)

-Already in Southern Maine-

Invasion Pathway:

Accidental Introduction, Ornamental planting

Spread:

Eggs, crawlers on wind, vehicles, clothing, birds, mammals, etc.; all stages on live hemlock material

Recognizing HWA

- Hemlock
- ~1/8” or less discrete white woolly masses
- On undersides of branches
- On outer portions of branch
- Most stages immobile
- Branch dieback bottom up (vs. borer, mite)

Where in Maine is HWA found?

2003

Kittery, York

2004

Wells

2005

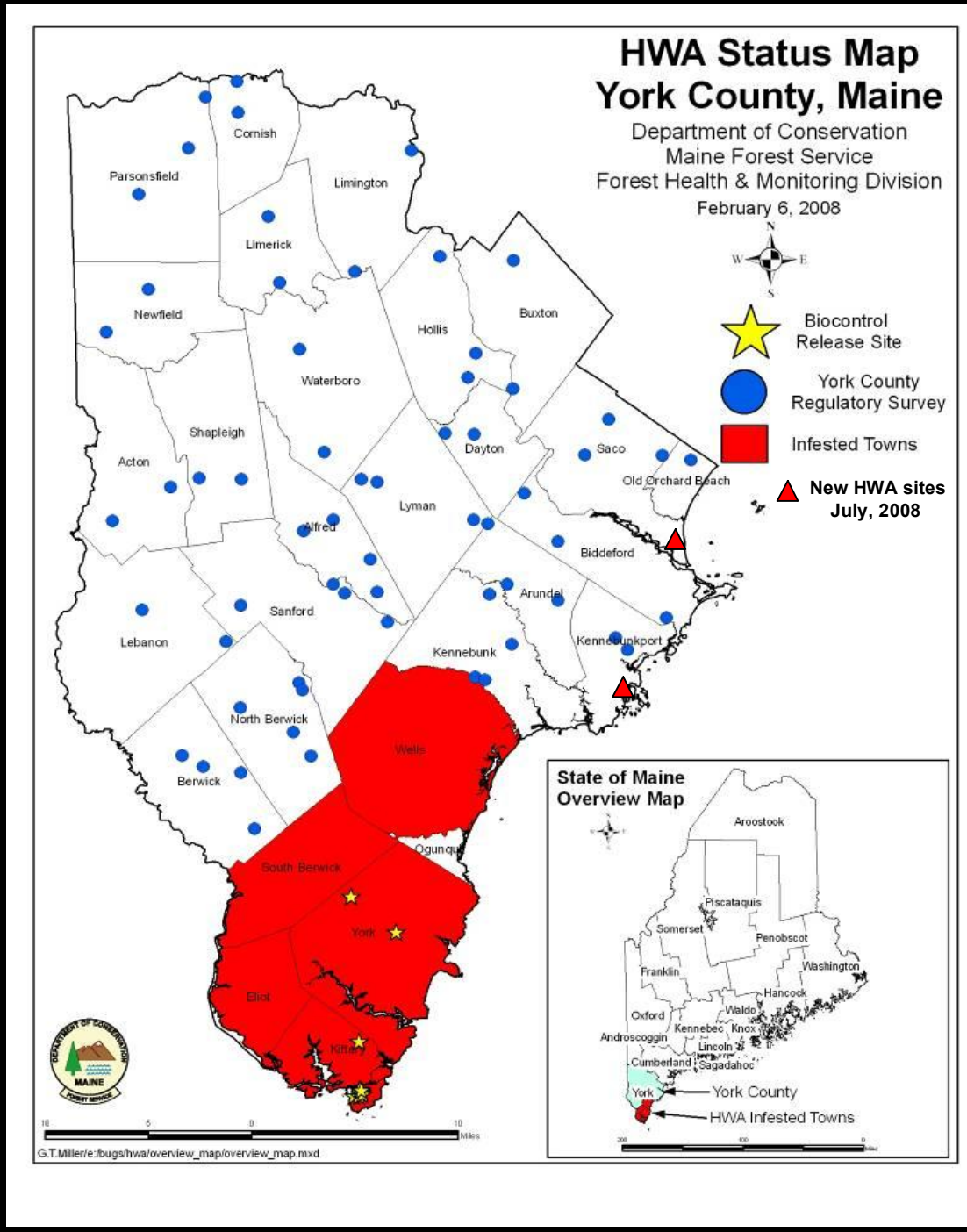
Eliot, South Berwick

2008

Saco, Kennebunkport

Scattered Infestations

Note: Ogunquit is within the HWA quarantine.



Impacts

Hemlock health
Water Quality
Wildlife (deer, trout)
Timber

Should I really worry, or are you just trying to scare me?

Detection methods are poor and infestations are usually not found early.

(ALB in Worcester 8-15 years before noticed)

Many of these pests may already be here: ALB, EAB

You are the best ally for your forest

There are very few entomologists state-wide – we need your help

Therefore: Be informed.

Know your forest, know what it should look like, report concerns/changes.

Know invasive threats, know what to look for, report concerns.